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BUREAU OF ANIMAL INDUSTRY.

Hearings before the Committee on Expenditures in the Bureau of Agriculture. 1913.



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BUREAU OF ANIMAL INDUSTRY

HEARINGS

BEFORE THE

COMMITTEE ON EXPENDITURES IN THE DEPARTMENT OF AGRICULTURE

HOUSE OF REPRESENTATIVES

RELATING TO THE

BUREAU OF ANIMAL INDUSTRY

JANUARY 23, 1913

PART 1



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BUREAU OF ANIMAL INDUSTRY.

COMMITTEE ON EXPENDITURES IN THE
DEPARTMENT OF AGRICULTURE,
HOUSE OF REPRESENTATIVES,
Washington, D. C., January 23, 1913.

The committee met at 10 o'clock a. m., Hon. Ralph W. Moss (chairman) presiding.

Present: Hon. Ralph W. Moss (chairman) and Charles W. Sloan.

STATEMENT OF DR. A. D. MELVIN, CHIEF OF THE BUREAU OF ANIMAL INDUSTRY, DEPARTMENT OF AGRICULTURE.

Mr. SLOAN. How long have you been Chief of the Bureau of Animal Industry?

Dr. MELVIN. Since 1905.

Mr. SLOAN. And during that time have the investigations of your bureau been directed toward the discovery of a remedy for the disease commonly known as hog cholera?

Dr. MELVIN. The serum treatment for hog cholera was discovered shortly before that time, during about the years 1903 and 1904.

Mr. SLOAN. Were you connected with the bureau at that time?

Dr. MELVIN. Yes, sir; but as assistant chief of the bureau.

Mr. SLOAN. I will ask you to state, for the record, the approximate value of the swine products annually in the United States. I do not care whether you put it in the record right now, or whether you supply it later.

Dr. MELVIN. From figures compiled last year we estimated that the money value of the swine, the annual product in swine, was about \$700,000,000.

Mr. SLOAN. About how many swine are there in the country, or were there during last year? That is the year you are speaking about, I suppose?

Dr. MELVIN. Yes; this represents about the annual slaughter of swine.

Mr. SLOAN. About how many swine were there in the United States during the last year?

Dr. MELVIN. Approximately 65,500,000.

Mr. SLOAN. About how many, or what percentage of those do you estimate, died of disease?

Dr. MELVIN. The Bureau of Statistics of our department estimates that the average annual losses of hogs from disease is slightly in excess of 5 per cent. This bureau estimates that out of this loss probably not less than 90 per cent is produced by hog cholera, and we believe that the yearly loss in money is in the neighborhood of \$18,000,000. There are, however, no exact statistics on this subject available.

Mr. SLOAN. Then the losses of hogs from cholera would be about 4½ per cent annually, would they not?

Dr. MELVIN. Yes, sir.

Mr. SLOAN. That is, 90 per cent of 5 per cent?

Dr. MELVIN. Of course that varies in different years; sometimes that loss might be considerably in excess of that.

Mr. SLOAN. Have you compiled a statement, or can you compile a brief statement showing the approximate losses from hog cholera for the last 25 years?

Dr. MELVIN. We have such a statement.

Mr. SLOAN. Will you give such a brief statement for the record?

Dr. MELVIN. Yes, sir. Do you wish a compilation of this, or do you wish me to just submit that as it is?

Mr. SLOAN. Just submit that as it is, if it is complete.

Hogs and hog cholera, 10-year period, 1903-1912.

Average annual number of hogs in United States.....	53,700,000
Average total losses by disease.....	per cent.....
Estimated average losses by hog cholera.....	do.....
Average annual loss by hog cholera	number.....
Average annual farm value per hog.....	\$7.36
Average total loss from hog cholera	\$17,789,120

Estimate of losses from hog cholera for the year ending Mar. 31, 1912.

[Based on data compiled by Bureau of Statistics, Department of Agriculture.]

State.	Number hogs estimated in State Jan. 1, 1912.	Number of hogs lost by hog cholera.	Per-cent-age lost due to hog cholera.	Total value hogs in State Jan. 1, 1912.	Value of hogs lost by hog cholera.
Maine.....	101,000	1,363	1.35	\$1,162,000	\$15,700
New Hampshire.....	53,000	954	1.80	556,000	10,000
Vermont.....	111,000	3,996	3.60	1,110,000	40,000
Massachusetts.....	117,000	3,685	3.15	1,322,000	45,000
Rhode Island.....	16,000	259	1.61	192,000	3,100
Connecticut.....	60,000	2,592	4.32	696,000	30,700
New York.....	777,000	20,279	2.61	7,925,000	206,900
New Jersey.....	165,000	5,940	3.60	1,864,000	67,100
Pennsylvania.....	1,141,000	37,995	3.33	11,410,000	380,000
Delaware.....	59,000	4,048	6.74	425,000	29,200
Maryland.....	345,000	23,284	6.74	2,760,000	186,300
Virginia.....	880,000	31,680	3.60	5,544,000	199,600
West Virginia.....	363,000	13,394	3.69	2,432,000	89,600
North Carolina.....	1,405,000	55,638	3.96	10,397,000	401,700
South Carolina.....	797,000	43,038	5.40	6,376,000	344,300
Georgia.....	2,098,000	169,938	8.06	14,057,000	1,138,600
Florida.....	954,000	85,860	9.00	4,961,000	446,500
Ohio.....	3,578,000	225,414	6.30	29,340,000	1,848,400
Indiana.....	4,031,000	453,487	11.25	31,039,000	3,491,900
Illinois.....	4,640,000	897,840	20.35	40,832,000	7,901,000
Michigan.....	1,382,000	49,752	3.60	11,747,000	422,800
Wisconsin.....	2,051,000	51,686	2.52	19,690,000	496,200
Minnesota.....	1,702,000	47,440	2.70	17,701,000	493,400
Iowa.....	9,689,000	697,708	7.20	94,952,000	6,837,600
Missouri.....	4,491,000	646,704	14.40	31,437,000	4,527,000
North Dakota.....	359,000	4,846	1.35	3,770,000	50,900
South Dakota.....	1,104,000	37,756	3.42	9,826,000	336,000
Nebraska.....	4,267,000	230,418	5.40	37,550,000	2,027,700
Kansas.....	2,808,000	333,590	11.88	22,183,000	2,635,300
Kentucky.....	1,724,000	108,612	6.30	9,310,000	586,500
Tennessee.....	1,574,000	99,162	6.30	9,601,000	604,900
Alabama.....	1,533,000	89,680	5.85	9,964,000	583,000
Mississippi.....	1,577,000	106,447	6.75	10,250,000	692,000
Louisiana.....	1,642,000	147,780	9.00	9,524,000	857,100
Texas.....	2,544,000	77,846	3.06	16,027,000	485,500
Oklahoma.....	1,410,000	184,005	13.05	7,755,000	1,012,000
Arkansas.....	1,738,000	218,988	12.60	9,385,000	1,182,500
Montana.....	143,000	2,445	1.70	1,416,000	24,200
Wyoming.....	43,000	464	1.08	370,000	3,900

Estimate of losses from hog cholera for the year ending Mar. 31, 1912—Continued.

State.	Number hogs estimated in State Jan. 1, 1912.	Number of hogs lost by hog cholera.	Per-cent-age lost due to hog cholera.	Total value hogs in State Jan. 1, 1912.	Value of hogs lost by hog cholera.
Colorado.....	211,000	3,798	1.80	\$1,688,000	\$30,400
New Mexico.....	50,000	720	1.44	410,000	5,900
Arizona.....	22,000	237	1.08	231,000	2,500
Utah.....	79,000	1,137	1.44	711,000	10,200
Nevada.....	30,000	648	2.16	315,000	6,800
Idaho.....	212,000	2,671	1.25	1,696,000	21,300
Washington.....	246,000	4,870	1.98	2,337,000	46,200
Oregon.....	258,000	3,715	1.40	2,193,000	31,500
California.....	830,000	18,675	2.25	6,889,000	155,000
United States.....	65,410,000	5,251,010	8.02	523,328,000	42,042,900

BUREAU OF ANIMAL INDUSTRY.

Swine, number per 1,000, died from disease, years ending Mar. 31, 1884 to 1912.

Utah.....	30	60	40	40	51	50	54	40	15	23	11	32	20	30	13	12	9	11	5	20	10	14	40	6	42	19	20	17	16	
Nevada.....	50	60	50	80	30	20	35	25	32	0	23	15	2	6	47	19	10	16	18	21	20	40	30	20	8	22	24			
Idaho.....	50	70	50	37	30	20	7	20	41	3	38	15	23	24	11	15	28	28	11	13	15	13	11	12	18	18	19	14		
Washington.....	50	50	50	40	27	26	58	25	25	10	21	30	36	11	33	23	24	18	20	16	13	18	15	20	15	22	17	22		
Oregon.....	60	60	30	50	30	23	67	23	24	37	10	12	22	35	18	15	22	30	27	13	15	12	10	16	20	20	18	16		
California.....	50	70	50	100	40	25	59	48	31	29	18	49	80	52	33	56	28	53	61	57	45	33	32	50	25	31	38	32	25	
United States...	86	91	130	134	78	62	76	84	54	63	49	92	127	144	93	82	64	75	52	58	58	51	51	49	52	51	45.1	44.8	89.2	

Estimated 90 per cent of loss due to hog cholera.

Mr. SLOAN. What other disease, if any there is, afflicting any of the valuable farm animals that anywhere nearly compares in amount with the loss suffered through hog cholera?

Dr. MELVIN. There are two diseases which cause tremendous loss. Of course the exact loss is very roughly estimated. The loss through the tick fever has been variously estimated at from \$25,000,000 to \$40,000,000 a year. The loss on account of tuberculosis in cattle has been estimated at over \$10,000,000 a year, and there would be a considerable proportion of loss among swine on account of tuberculosis. That would run into the millions of dollars. I am not prepared to say just how much, though.

Mr. SLOAN. Then there is only one disease afflicting the farm animals that exceeds in amount of loss to the animal raiser that caused by cholera—that is the Texas tick fever; is that what you call it?

Mr. MELVIN. The indirect loss due to tuberculosis is very great. It is harder to estimate the loss from tuberculosis because of its insidious nature; it is not as rapidly fatal as hog cholera.

Mr. SLOAN. And not so well understood?

Dr. MELVIN. And not so well understood, but the losses in tick fever are comparatively easily arrived at, and those three diseases, I should say, cause the great proportion of the losses to the live stock in the country.

The CHAIRMAN. On that point, in estimating a loss that comes from the tick fever, are you taking into account actually the loss that occurs, or constructive losses; I mean to say, the retardment of the improvement of the breed, and the expansion of it, etc.?

Dr. MELVIN. All those factors we have estimated in computing the loss on account of tick fever. The direct loss by death alone, of course, is not nearly so great as that.

The CHAIRMAN. That was my impression. What would you say would be the probable extent of the direct death losses, due to the southern tick fever?

Dr. MELVIN. Probably not more than 15 or 20 per cent of that amount.

The CHAIRMAN. So that one of the great purposes and one of the great advantages of the eradication of the tick fever is to make possible the expansion of the cattle industry in the South and the improvement of the grade of cattle, is it not?

Dr. MELVIN. Yes, sir. There is a great loss, too, which extends somewhat beyond that, namely, that arising from the restricted facilities in marketing such cattle and in the loss in hides through the damage made by ticks, but all those factors have entered into the estimates.

Mr. SLOAN. Your statement of \$18,000,000 for the loss caused by hog cholera was actual death loss, was it not?

Dr. MELVIN. Yes.

Mr. SLOAN. And in that estimate you did not include the general, incidental loss to the business suffered by deterring the breeder from going on with his work, or loss incident to the dissemination of his work outside of the actual death loss; you did not take that into account at all, did you?

Dr. MELVIN. No, sir.

The CHAIRMAN. Dr. Craig, of the Indiana agricultural department, made a statement to me that in certain portions of Indiana, under present conditions, men could not grow hogs profitably, and he had advised them not to grow hogs on account of the ravages of the cholera. Do you know of any other section of the country where that statement might be said to obtain?

Dr. MELVIN. No; I can not name any section now, but I have no doubt that there are quite a good many such sections.

The CHAIRMAN. It is also true, is it not, that under present conditions hogs, in a great many sections, have to be kept in smaller herds than otherwise they would be if there was no danger of cholera?

Dr. MELVIN. Decidedly so; yes, sir.

Mr. SLOAN. What, if any, stringent provisions are there in the present law relative to the control of the shipment of cholera-infected hogs in interstate commerce?

Dr. MELVIN. There is a general law of 1884 that prohibits the interstate shipment of any live stock affected with any contagious, infectious, or communicable disease, and that applies equally to hog cholera.

Mr. SLOAN. But there is none relating especially to hog cholera, is there?

Dr. MELVIN. No; but, of course, hog cholera would be included in that list.

Mr. SLOAN. Do you know to what extent that is observed and enforced with reference to cholera? Have you anything to say particularly on that point?

Dr. MELVIN. Well, I do not believe it is very well observed by owners of hogs. It is the usual custom, when cholera develops in a herd, for the owner to try to market them as early as possible so as to avoid losing his entire herd. We, however, where we have evidence presented or can obtain evidence that these interstate shipments have been knowingly made, bring prosecution for violation of the statute.

Mr. SLOAN. Is this disease readily communicable from one animal to the other direct, and also through leaving the germs in freight cars, live-stock cars, and other methods?

Dr. MELVIN. Yes; it is a very highly contagious disease and is communicated in both ways.

Mr. SLOAN. Just state, Doctor, from your knowledge of the manner of shipment of hogs, how it may be carried short or great distances.

Dr. MELVIN. In many outbreaks of cholera the disease is subacute, and in this form an owner could ship his apparently well hogs from some western State to a live-stock center, such as Chicago, and without the disease having been developed sufficiently at the time of their arrival at Chicago to cause suspicion. These hogs might then be bought, and frequently are bought for shipment to eastern markets, such as Buffalo, New York, or points in Massachusetts. Under the provisions of the 28-hour law these hogs would either have to be fed, watered, and rested in the cars or unloaded in stock yards en route for feed, water, and rest. In the latter case, we would be very apt to have several centers of infection established at these unloading yards between Chicago and this eastern point. Following this it would be quite a common matter for some farmer or stockraiser in one of these intermediate States, to bring in some stock hogs, unload them in these

infected pens and distribute them among his neighbors, and thus have a number of centers of infection established. This same thing would apply to hogs which might be shipped out of a State through one of these infected railroad yards. On account of the prevalence of cholera the department does not now permit the shipping out from any of the large stock-yard centers of hogs for breeding or feeding purposes, because these yards are considered as being constantly infected with cholera.

Mr. SLOAN. Doctor, the department has developed a serum. You may state briefly as to its production, efficacy, and what the department has done toward distributing it and demonstrating its efficacy?

Dr. MELVIN. We have a small rented farm situated near Ames, Iowa, where we produce each year a limited amount of serum, and at this farm we also conduct further research work looking to some cheaper method of production and studying the disease in its various phases, also testing various serums now on the market. In 1908 we invited representatives of all the States to attend a demonstration at this Ames farm to observe our methods of its production and use. Some 23 States were represented during the three meetings we held that year. This was with a view to encourage the States to take up the work and supply the hog raisers of their States with the serum. Previously, and since then, we have made demonstrations in different sections of the country to show its efficacy. We tried to distribute this work as widely as possible in order to call it to the attention of a large number of people. We have met with almost universal success in arresting the disease, but it has never been a cure, and is not a cure, but is a preventive.

The CHAIRMAN. Did I understand you to say this serum is not a cure of hog cholera?

Dr. MELVIN. No, sir; we have not considered it as such. It is possible, if used in the very earliest stages of the disease, that it might cure, but we do not look upon it as a cure.

The CHAIRMAN. Right at that point will you state what activities are going on in the department at the present time to discover a cure for hog cholera?

Dr. MELVIN. We have issued circulars at different times suggesting various remedies or formulæ that might be used looking to the cure of cholera, but the disease is of such a nature that we have looked upon any medical treatment as of very little value. Usually the disease progresses so rapidly that medicines can not have time to operate, and we feel that the only success which will be attained is in preventing the balance of the infected herd from becoming sick, or treating them with serum in the first instance and preventing the sickness entering the herd at all.

The CHAIRMAN. As a matter of fact, a few years ago the department submitted to the hog growers of the country a certain receipt or compound of medicines as a cholera cure, did you not?

Dr. MELVIN. Yes.

The CHAIRMAN. That was before serum was discovered, was it not?

Dr. MELVIN. Yes, sir.

The CHAIRMAN. And you rested the reputation of the department at that time upon this remedy you submitted to the country, did you not?

Dr. MELVIN. We did not look upon it as an absolute cure. It was the best we thought we could suggest at that time.

The CHAIRMAN. At that time it represented the sum of the best knowledge the Department of Agriculture had, and I say you rested your reputation upon that, did you not?

Dr. MELVIN. Yes.

The CHAIRMAN. Did you carry that investigation any further since the compounding of that prescription?

Dr. MELVIN. I think the formulæ has been changed in some respects since it was originally issued.

The CHAIRMAN. Have you carried on actively the work of testing and changing it from the time you published it generally over the country until the present time, Doctor?

Dr. MELVIN. I think the last change in the formula was about three or four years ago.

The CHAIRMAN. How much money in your department has been devoted to that particular phase of the work, of testing that formula or other formulæ of that kind, perfecting it as a medicinal cure of hog cholera, since the publication of that paper?

Dr. MELVIN. It would be very small, the amount we have spent would be very small, comparatively speaking.

The CHAIRMAN. As a matter of fact did you not practically cease such active operations after you published that remedy?

Dr. MELVIN. I do not think we have carried on any experimentation since then with reference to a cure.

The CHAIRMAN. Then you took up the question of serum, did you?

Dr. MELVIN. Yes, sir.

The CHAIRMAN. Has that generally been advertised by the Department of Agriculture as a preventive and not a cure?

Dr. MELVIN. Yes, sir; as a preventive.

The CHAIRMAN. Then you wish to give the committee to understand that for a series of years you have not been attempting to discover and perfect a cure of hog cholera?

Dr. MELVIN. We simply have not been able to get any new thought on the subject of a cure. I should not like the committee to think we have not given it any thought, because we have, but we have been absolutely at sea as to what to recommend further than what has been recommended.

The CHAIRMAN. I beg your pardon, but you did not quite comprehend my question. My inquiry was not as to the results, but as to the efforts. How much money are you spending each year, and how much have you been spending devoted to the finding of a cure for hog cholera, and what experiments have you conducted?

Dr. MELVIN. Practically no money has been expended along that line.

The CHAIRMAN. Have you detailed any expert to make a continued study and experimentation looking toward the development of a cure of hog cholera?

Dr. MELVIN. No, sir.

The CHAIRMAN. Have you submitted to the Committee on Agriculture at any time an estimate asking for money to carry on original research work looking to the perfecting of a cure of hog cholera?

Dr. MELVIN. Not specifically. The funds, though, would be available under the appropriation for diseases of animals.

The CHAIRMAN. Have you sufficient authority under the present terms of your appropriation bill to take up and carry on the work of discovering a cure for hog cholera?

Dr. MELVIN. Yes, sir.

The CHAIRMAN. And have you had sufficient funds so that you could carry it on, if you cared to do so?

Dr. MELVIN. Yes; I think we could have found the funds if we had known in what direction to spend them.

The CHAIRMAN. Then what is the real reason the work has not been attempted?

Dr. MELVIN. Because we had no idea of what might be used beyond what we had already prescribed as remedies.

The CHAIRMAN. I made a visit to Mount Weather, in Virginia, and I saw Prof. Moore flying kites in the air, at a pretty heavy expense. When I asked him what purpose he had in view, he said he did not know; that there was so little known about the weather that there were not sure what they could find out by flying these kites, but so long as there was so much not known about the weather he felt perfectly justified in keeping up this activity in his department. I should like to ask you whether you feel the same way—that so long as there is so much not known about hog cholera, and it is of so great importance to agriculture, if you do not feel justified in keeping up your activity along that line?

Dr. MELVIN. The two propositions, Mr. Chairman, are very different. We must have some new thought to pursue to investigate, and we have tried in the past various remedies and are in the dark as to any new treatment that we might adopt; then, again, in treating hogs for cholera as compared to flying kites, there would be a great difference, as it would be a constant, heavy expense. Sick hogs, as a rule, die of cholera in a very short time, and it would be a rather difficult matter to continue indefinitely along that line, except at a tremendous expense.

The CHAIRMAN. You say that in times past you tried new remedies for hog cholera. How many years would you have to go back before you reach the limit of that term, "in times past," when you tried new remedies for hog cholera?

Dr. MELVIN. Probably four or five years.

The CHAIRMAN. Practically since the publication of this Government receipt, is it not, Doctor?

Dr. MELVIN. Yes.

The CHAIRMAN. That has been more than four or five years past, has it not?

Dr. MELVIN. It is about four or five years, I think, since it was last revised. That is the date I had in mind.

The CHAIRMAN. At the time you last revised it, was it then a cure for hog cholera?

Dr. MELVIN. Yes, sir.

The CHAIRMAN. Would it cure hog cholera, do you mean to say, when you last revised it?

Dr. MELVIN. We would not guarantee it to cure, of course, but it was the formula we thought would be the most effective in treating hog cholera.

The CHAIRMAN. At that time you knew it would not cure hog cholera, did you not?

Dr. MELVIN. We knew it would not in all cases, yes, sir.

The CHAIRMAN. The point I wish to know and get before the committee, and it is not in a critical vein, but we want to get the actual facts about it. When was it your department quit the search for a cure for hog cholera? That is the point I wish to know.

Dr. MELVIN. We practically quit the study of medical treatment when we discovered a preventive treatment. The whole line of medical thought nowadays is looking toward the prevention of disease, rather than the cure, and I presume that the money that is expended in human medicine is in the proportion of 100 to 1 in favor of preventive treatment rather than curative treatment.

The CHAIRMAN. Let us admit that fact, but we should still like to fix the date when you quit, practically, the study to the end of attempting to find a cure for hog cholera.

Dr. MELVIN. I would say about five or six years ago.

Mr. SLOAN. Just in that connection, right there, have there, for a few years prior thereto, been any practical advances made by anybody in the world that seemed to promise an effective remedy for the disease, when once contracted?

Dr. MELVIN. I think not, notwithstanding the claims of manufacturers of various proprietary substances and fake remedies.

Mr. SLOAN. You spoke about the demonstrations of this serum. About how many demonstrations did you make showing the manner of application and also demonstrating the efficacy of the serum treatment?

Dr. MELVIN. We gave two public demonstrations; one in the Kansas City stockyards during the year 1910, and later in the next year we gave a demonstration in the South Omaha stockyards. We have made a great many demonstrations in connection with State officials and private individuals on farms where we thought it was advisable to conduct the work.

Mr. SLOAN. To what extent were these demonstrations made; that is, what I want to arrive at is to show how much has been done to get this home to the swine breeders and owners?

Dr. MELVIN. In Kansas City our demonstration involved work requiring 35 young shoats. In Omaha about 30 pigs were used. These were the most important ones that we conducted and the only public ones.

Mr. SLOAN. Had you sent men from the department or from the bureau to distant parts of the country to swine breeders' gatherings or associations to make demonstrations for the purpose of familiarizing the swine owners with the method of application and the efficacy of the preventive?

Dr. MELVIN. We have not made any demonstrations at such gatherings. We have had employees to go and address the meetings with reference to its use. We have also, for this same purpose of demonstrating its efficiency for the last three or four years, treated the hogs which were exhibited at the International Livestock Exhibit, at Chicago, and during the last summer, I think, this was done at several State and other prominent fairs in the different States. This, of course, is one of the many means of disseminating hog cholera through the sending out from these fairs to various farmers these stock hogs, which may become infected at these fairs, and if this could be taken up generally by the States and by the General Government it would

no doubt result in lessening these outbreaks. As a matter of fact, during the year 1911 there was one herd of hogs which arrived at the International Stock Show in Chicago affected with cholera, and several of them died. The balance of the herd were treated with serum and saved, and there were no outbreaks among the other hundreds of hogs which had also been treated and were on exhibition there.

Mr. SLOAN. You say the balance were saved through this serum treatment then administered?

Dr. MELVIN. Yes, sir; before they had contracted the disease.

Mr. SLOAN. What, if any, appropriation is there that could be used in extending and increasing these demonstrations? Is there any such fund as that?

Dr. MELVIN. There is a fund, but the estimates as submitted to the committee were only sufficient to provide for work which we now have on hand and not for increasing this demonstration work. We would not be able to conduct or increase this demonstration work without a considerable increase in those funds.

Mr. SLOAN. If an increase in appropriations should be made, is your bureau so organized that it has or could have available competent men who could be sent to different points in the several States to make these demonstrations?

Dr. MELVIN. Yes, sir.

Mr. SLOAN. If such funds were provided and such competent persons sent, in your opinion would it be wisely spent money looking toward the reduction of this very large annual loss which you have recited to the committee?

Dr. MELVIN. I think undoubtedly it would. I think that if we were provided with funds, so we go into several States and take up a considerable section, involving three or four counties in a block, and there demonstrate that losses from cholera need not necessarily exist, that it would be of immense value to the country. I think we could demonstrate to the States that by careful organization and the use of an efficient serum that the cholera could be reduced to a minimum and probably eventually eradicated.

Mr. SLOAN. You speak about efficient serum. Is there any inefficient serum; and if so, how does it arise and how does it become so?

Dr. MELVIN. There are inefficient serums, as we have been able to demonstrate by experimentation made at our Ames farm. These were prepared by private manufacturers. It is possible, unless close observation is constantly had of the method of manufacture, that serum which has a low protecting value may be prepared. All serum does not have the same protective value, and unless these serums are tested before they are sent out the manufacturer may think he is sending out efficient serum when, in fact, it is one that under ordinary conditions would not protect. All these things have to be carefully guarded in order to know just how efficient the serum is before it is sent out and in what doses it should be given. We find that all serum can not be used under the same dosage.

Mr. SLOAN. For the ensuing year, what reasonable amount of funds might prudently and effectively be used along the lines you suggest?

Dr. MELVIN. Of course, in demonstration work of this character the committee would consider that estimates that we made might

materially be decreased later, as when the methods were put into practical operation by States, and we would have to, in making any estimates, figure on the maximum expenses rather than on the minimum expenses, because we would not care to undertake an experiment of this sort without being able to put it through successfully. I think that in taking a block of counties of, say, four in a State, considering the maximum number of men that we would require and the maximum amount of serum that we would require, and all that, it would be an item of probably \$15,000 for that block of counties. Now, of course, the number of sections that we would take up would be increased in proportion.

The CHAIRMAN. Just on that point let me ask you one or two questions, please. I have understood from your general statement that hog cholera is a very difficult disease to handle?

Dr. MELVIN. Yes, sir.

The CHAIRMAN. And, of all the infectious diseases, probably one of the most difficult?

Dr. MELVIN. Yes, sir; it is probably the most highly infectious.

The CHAIRMAN. As compared, for instance, with blackleg in cattle, it is a much more difficult disease, is it not, to vaccinate and give complete protection?

Dr. MELVIN. Much more so, yes, sir.

The CHAIRMAN. Do you consider that at the present time that the knowledge of serum, its proper manufacture and the proper manner to use it, so as to insure the highest state of protection, is so well understood that the serum in private hands, or even in a great many instances in State hands, is manufactured properly and applied properly to the farmer's herd?

Dr. MELVIN. I think there are many instances where it has been improperly used; but I think these difficulties can be overcome if the department could oversee these methods of preparation along the lines of supervision, such as the Public Health Service now exercises over manufacturers of diphtheria antitoxin and similar substances for human use.

The CHAIRMAN. Do you believe that serum properly manufactured and properly applied is a preventative of hog cholera?

Dr. MELVIN. Absolutely so.

The CHAIRMAN. Do you believe that?

Dr. MELVIN. Yes, sir.

The CHAIRMAN. Then, if in fact hogs have been vaccinated and have died from cholera, what is the reason?

Dr. MELVIN. There might be several specific reasons why this treatment failed to protect, but undoubtedly there was some failure in the proper technique in its manufacture or application; either the serum was produced from hyperimmune hogs that were not as thoroughly immunized as they should have been, or the serum was used in too small doses.

The CHAIRMAN. How long has it been since the serum was given to the world?

Dr. MELVIN. I think it was patented in 1906.

The CHAIRMAN. To what extent have the losses from cholera in the United States been lessened since it has been given to the world?

Dr. MELVIN. I do not think very materially. It has been claimed that in some sections the disease has been increased through the distribution of impotent serum used in connection with virulent vaccine virus.

The CHAIRMAN. We have had a remedy against hog cholera—a preventative, I mean, for six years, but in practice it has not reduced the ravages of the disease among the herds in the United States, practically speaking. Is that the case?

Dr. MELVIN. Yes.

The CHAIRMAN. If that is true, is it not patent that there lies the very best field possible for demonstration work on the part of the United States Government?

Dr. MELVIN. I think so.

The CHAIRMAN. That is the point I wish to get at. I am going to ask you whether during these six years it has been the custom of your department to send your experts to centers of hog cholera infection to take up the work and to show that those losses can be avoided, and to stop the ravages of the disease. Have you done that?

Dr. MELVIN. Only to a very limited extent, because we did not have sufficient means to do it generally.

The CHAIRMAN. I am not speaking of the causes. I simply ask whether you did it or not.

Dr. MELVIN. No, sir; only to a limited extend.

The CHAIRMAN. It is a matter of common knowledge that hog cholera does come by outbreaks, is it not?

Dr. MELVIN. Yes, sir.

The CHAIRMAN. And some of them are very much more severe than others?

Dr. MELVIN. Yes, sir.

The CHAIRMAN. And sometimes the hog cholera proves very much more fatal than at other times. does it not?

Dr. MELVIN. Yes, sir.

The CHAIRMAN. During these six years, then, you have not sent your department workers to demonstrate the efficacy of the treatment where this disease was ravaging?

Dr. MELVIN. Not generally; no, sir. We have in a few cases.

The CHAIRMAN. I will ask you to put in the record precisely the instances where you did do it in the last six years. Please furnish specific incidents of those six years where you have sent the agents of your department to centers of hog cholera infection and demonstrated your work.

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF ANIMAL INDUSTRY,
Washington, D. C., January 24, 1913.

PARTIAL SUMMARY OF RESULTS OBTAINED FROM APPLICATION OF BUREAU OF ANIMAL INDUSTRY'S ANTIHOG-CHOLERA SERUM.

[All animals were kept under ordinary farm conditions.]

October 19, 1908 (Michigan): Infected herd. When visited one hog had died, 7 were sick, and 21 apparently well. Treated, 23 (3 of which were sick). Untreated, 5.

Results: Treated, survived, 22 or approximately 96 per cent; untreated, survived, none.

October 20, 1908 (Michigan): Herd slightly infected. Treated, 11; untreated, 4.

Results: Treated, all remained well; untreated, all died.

July 15, 1909 (Maryland): Experiment. Owner had lost nearly all of his herd. He bought 11 pigs and agreed to have some of these treated by the serum simultaneous

method and others inoculated with virus alone to serve as checks. Treated, 7; virus alone, 3.

Results: All treated animals remained well; all virus-alone animals died.

August 25, 1909 (Virginia): Data incomplete on account of remoteness of the herd, but reported that all treated animals remained well, while all untreated ones died.

September 15, 1909 (Virginia): Data incomplete. All treated animals remained well; all untreated animals died.

December 6, 1909 (Virginia Agricultural Experimental Station): Herd infected. Treated 43, many of which were sick; untreated, none.

Results: Survived, 29 or approximately 68 per cent; died, 14 or approximately 32 per cent.

December 21-22, 1909 (Virginia): Herd very badly infected. About 35 animals had died, and practically all of the survivors were showing symptoms of hog cholera to a greater or less degree. Treated, 113, many of which were sick; untreated, 179.

Results: Treated, survived, 79, or approximately 69.91 per cent; treated, died, 34, or approximately 30 per cent; untreated, survived, 111, or approximately 62 per cent; untreated, died, 68, or approximately 38 per cent.

This data is incomplete, as at last report some of the untreated animals were said to have been "looking badly."

February 18, 1910 (West Virginia Hospital for Insane): Herd infected. Treated, 47 (many of which showed early symptoms of disease); untreated, 52.

Results: Treated, survived, 36, or approximately 76 per cent; treated, died, 11, or approximately 24 per cent; untreated, died, 52, or 100 per cent.

April 16, 1910 (Maryland): Disease just beginning. Treated, 34; untreated, 16.

Results: Final report stated that all treated animals remained well. No mention was made as to the untreated ones.

April 16, 1910 (second herd, Maryland): Data incomplete; no detailed final report. Only the general statement received that all treated animals remained well.

July 9, 1910 (Iowa): Owner had lost the greater portion of his herd and had procured 14 pigs from one of his neighbors for this experiment. The simultaneous method was employed. Treated by, 11; virus alone, 3.

Results: Treated, survived, 8, or approximately 73 per cent; treated, died, 3, or approximately 27 per cent. All virus alone animals died.

July 21, 1910 (Nebraska): Infected herd. Data incomplete. The final report was to the effect that nearly all treated animals survived. No statement as to the untreated ones.

November 12, 1910 (Washington, D. C., jail): Herd badly infected. Treated, 18; untreated, exact number not known.

Results: Treated, survived, 14, or approximately 78 per cent; treated, died, 4, or approximately 22 per cent.; untreated, no exact data. Received only the statement that all untreated animals died.

December 2, 1910 (Maryland): Disease just beginning; 4 animals had died. Treated, 82; untreated, 34.

Results: Treated, survived, 73, or approximately 90 per cent; treated, died, 9, or approximately 10 per cent.

(The report on the untreated hogs is incomplete, but as near as could be determined 73 per cent died and 27 per cent survived.)

March 3, 1911 (Maryland Agricultural Experiment Station): Herd slightly infected. Treated, 42 (3 of which showed the early symptoms of hog cholera); untreated, 0.

Results: Treated, survived, 41, or approximately 98 per cent; treated, died, 1, or approximately 2 per cent. (This animal was one of those which were sick when treated.)

March 16, 1911 (Virginia): Herd badly infected. Treated, 24; untreated, 9.

Results: Treated, survived, 18, or 75 per cent; treated, died, 6, or 25 per cent; untreated, died, 9, or 100 per cent.

December 20, 1911 (North Carolina): Herd not infected. Treated, 4; untreated, 0.

Results: All animals remained well.

December 8, 1911 (Virginia): Herd infected. Treated, 8; untreated, 4.

Results: Treated, survived, 6, or 75 per cent; treated, died, 2, or 25 per cent; untreated, survived, 1, or 25 per cent; untreated, died, 3, or 75 per cent.

December —, 1911 (Maryland): Herd badly infected. Approximately 200 hogs had died. This herd is a very valuable one, being composed of pure-bred Duroc-Jerseys. Treated, 6; untreated, approximately 40.

Results: All treated animals survived. No accurate figures given as to the untreated animals, only the general statement was received that "a large number had died."

January 2, 1913 (Bureau of Animal Industry, Division of Animal Husbandry): Healthy herd, and was treated by the serum simultaneous method. Treated, 60; untreated, none.

Results: All animals remained well.

January 22, 1912 (Maryland): Herd infected. One animal had died and 3 were sick. Treated, 5 (3 of which were sick when treated). Untreated, none.

Results: Three, or 60 per cent of these animals died (sick when treated); 2, or 40 per cent of these animals survived (well when treated).

January 25, 1912 (Columbia Hospital for Deaf): Herd badly infected. Treated, 4. Number of untreated animals could not be ascertained.

Results: All treated animals survived. Reliable data concerning the untreated ones could not be obtained.

January 26, 1912 (Fort Hunt, Va.): Herd infected. Treated, 14; untreated, 18.

Results: Treated—survived, 13 or approximately 93 per cent; died, 1 or approximately 7 per cent. Untreated—survived, 8 or approximately 45 per cent; died, 10 or approximately 55 per cent.

February 27 and April 20, 1912 (Government Hospital for Insane, D. C.): This herd was infected and kept under poor hygienic conditions. Treated, 120; untreated, 44.

Results: Treated—survived, 118 or approximately 98 per cent; died, 2 or approximately 2 per cent. Untreated—no exact figures could be ascertained concerning these hogs, but the asylum veterinarian placed it at approximately 90 per cent.

November —, 1912 (Iowa Agricultural College). Disease just beginning. One or two hogs not eating well. Treated, 24; untreated, 3.

Results: Treated, survived, 24; untreated, died, 3.

December 14, 1912 (Virginia). Herd infected. Treated, 4; untreated, 4.

Results: Treated, survived, 4, or 100 per cent; untreated, survived, 1, or 25 per cent; untreated, died, 3, or 75 per cent.

July, 1908. Kansas City, Kans. Experiment. Thirty-five young shoats were purchased from a farm where hog cholera had not existed. These pigs, having been carried to the Kansas City stockyards, and being in charge of a committee appointed by the exchange, were treated as follows: Twenty-two were injected with anti-hog-cholera serum prepared by the bureau. Four were injected with virulent hog-cholera blood. Nine were not treated in any manner. All were placed in a pen together. As was expected, the 4 pigs inoculated with the virulent blood contracted hog cholera within a short time and all died. The 9 "checks" contracted hog cholera from those which were inoculated with hog-cholera blood, and they also died. The 22 pigs treated with the serum remained well with the exception of one or two, which were slightly affected on one or two days. It is not certain, however, that the trouble with the treated hogs was hog cholera, as none died. All of the autopsies on the check animals showed typical lesions of hog cholera.

August, 1910 (South Omaha, Nebr.): Experiment. This experiment was undertaken at the request of State officials and the Nebraska Swine Breeders' Association. The Union Stock Yards Co., of South Omaha, also offered to cooperate and to bear the expense incident to the purchase and care of hogs used in the experiment. Thirty pigs, weighing from 40 to 60 pounds, were purchased from a farm which had been free from hog cholera for several years. These hogs were carried to the stockyards and, on July 23, 1910, four of them were injected with blood from hogs sick of hog cholera. These injected pigs, which were placed in a pen by themselves, became sick on the 28th of July, at which time 18 of the remaining pigs were given one dose of the serum, while the other 8 pigs were not treated in any way. The 18 serum-treated pigs and the 8 untreated pigs were then placed in the same pen with the 4 pigs which had been made sick of hog cholera. The four pigs which were inoculated with hog cholera all died. The eight untreated check pigs all contracted hog cholera from the four inoculated ones. The 18 pigs which were given serum and which were confined in the same pen with the 4 original sick pigs and with the 8 untreated pigs, which became sick, remained perfectly well and were finally turned over to the officials of the stockyards company upon the completion of the experiment on September 17, 1910.

In conclusion, the total number of hogs treated by both the serum-alone and the serum-simultaneous methods in the above demonstrations was 744, of which 613, or approximately 82 per cent, survived, while of the untreated hogs, which numbered 362, 228, or approximately 65 per cent, died. The figures given showing the percentage of the untreated animals which died are not absolutely correct in that in the case of two herds the report was to the effect that a large number of untreated hogs died, while in four herds it was reported that all untreated animals died. As we had no definite data as to the number of untreated animals in these herds, they were not considered in figuring the percentage.

NOTE.—In addition to the above-described demonstration experiments, a number of similar experiments have been carried out; but the records of these tests are not immediately available. If the committee desires, they will be secured and furnished later.

The CHAIRMAN. Coming now to the appropriation—and we had better take the last appropriation bill instead of the one that has just been reported.

Dr. MELVIN. They are just the same, Mr. Chairman. There has been no change in this particular item.

The CHAIRMAN. It has been increased \$20,000, has it not, Doctor?

Dr. MELVIN. Not in the funds for this work.

The CHAIRMAN. On page 9 of the present bill for "General expenses, Bureau of Animal Industry." How much money was spent in the year 1913 under that item?

Dr. MELVIN. For this hog cholera work?

The CHAIRMAN. No; how much was spent under the item "General expenses, Bureau of Animal Industry"?

Dr. MELVIN. The total provided was \$1,217,862.

The CHAIRMAN. On page 11 there is an item of \$620,000. What was that spent for?

Dr. MELVIN. That was spent for inspection and quarantine; that includes our work in the eradication of scabies among cattle and sheep; our live stock import and export work; the maintenance of our quarantine stations, and what work we have done looking to the eradication and investigation of tuberculosis in cattle.

The CHAIRMAN. Was any of this \$620,000 available, in any degree whatever, in the treatment of hog cholera? It is limited just to the work here enumerated, is it not?

Dr. MELVIN. Yes, sir.

The CHAIRMAN. First, for inspection and quarantine work?

Dr. MELVIN. Yes, sir.

The CHAIRMAN. And that includes scabies in sheep and cattle, does it?

Dr. MELVIN. Yes, sir.

The CHAIRMAN. What are, or what is, "scabies"?

Dr. MELVIN. Scabies is a contagious disease due to a parasite or a scab mite which affects cattle and there is another variety affecting sheep, which it has been the endeavor of the department to eradicate for several years.

The CHAIRMAN. In what section of the country are the cattle infected with scabies found?

Dr. MELVIN. The section under quarantine on account of cattle scabies include portions of Montana, the two Dakotas, Nebraska, Colorado, New Mexico, Texas, and Oklahoma.

The CHAIRMAN. Is that an itch—is that the way you understand it?

Dr. MELVIN. Yes, sir; that is the common name for it.

The CHAIRMAN. Is it a fatal disease of cattle?

Dr. MELVIN. Not ordinarily. In old cattle, especially those that are thin and lacking in vigor, it is frequently fatal during the winter months. Cattle on good feed and grass in the summer generally improve, even with the presence of the disease, but it is very detrimental to the economical handling of live stock.

The CHAIRMAN. If it were left to itself, would it spread all over the United States?

Dr. MELVIN. It probably would; yes, sir.

The CHAIRMAN. Just what is your work under the question of the eradication of scabies in cattle—for instance, what does it consist of?

Dr. MELVIN. We have districts where this disease abounds under quarantine. Then we have inspectors under general instructions of a field station who inspect systematically the cattle in those vicinities and require their dipping and treatment so as to cure the disease. We also are required to inspect and certify to the clean live stock which go out of these quarantine districts, to any unquarantined section, to prevent its further spread.

The CHAIRMAN. Do you mean to say you inspect the stock on the individual ranches and farms?

Dr. MELVIN. Yes.

The CHAIRMAN. And at the market centers?

Dr. MELVIN. We also maintain inspections at the market centers; yes, sir.

The CHAIRMAN. Does the Government maintain dipping vats?

Dr. MELVIN. Usually that is done by the owners under the direction of the State officials; all of the work is done in cooperation with the State officers, and under their State laws, except that pertaining to interstate shipments, which of course is strictly Federal work.

The CHAIRMAN. Is the dip compounded by the Government or after your formula?

Dr. MELVIN. After our formula; yes, sir; but by the individuals.

The CHAIRMAN. Is this a work you expect to entirely end at some time, or will it be a continuing work?

Dr. MELVIN. No; we expect in the course of the next few years to end it completely.

The CHAIRMAN. What is meant by the inspection of southern cattle?

Mr. MELVIN. That is inspection of cattle in the quarantined areas. That is, the areas quarantined on account of ticks, which are to go outside of that area into interstate commerce, and we are required to see that the cars are properly placarded and the billing marked and that separate pens are maintained for the ticky cattle en route to market centers. The law provides that southern cattle may be shipped to market centers for slaughter; it exempts such cattle from the general provision of the law.

The CHAIRMAN. How much money are you spending out of this appropriation for southern cattle?

Dr. MELVIN. Roughly speaking, about \$30,000 a year.

The CHAIRMAN. The item of work relative to the existence of contagious diseases. What does that consist of, Doctor?

Dr. MELVIN. That is to cover any work we might have to do in the case of some unexpected outbreak of a contagious disease. We have had this past year, and the year before, an outbreak of dourine among horses in Montana and in Iowa, and that is a general law we have to cover any such instances that might arise.

The CHAIRMAN. Then, if the foot-and-mouth disease were to break out, would it come under this?

Dr. MELVIN. Yes.

The CHAIRMAN. If hog cholera were to break out, would it come under this?

Dr. MELVIN. It could come under there, although we have been spending for experimental work from a different fund.

The CHAIRMAN. You have never, then, spent any money from this item here, "inspection work relative to the existence of contagious diseases;" you have never spent any money from this item upon hog cholera, have you?

Dr. MELVIN. No, sir.

The CHAIRMAN. Have you upon any of the common contagious diseases that are practically always present?

Dr. MELVIN. Yes; tuberculosis and glanders, and then during the last year we had quite an expense paid out of that fund investigating a contagious disease that appeared among horses in Kansas, Nebraska, and eastern Colorado.

The CHAIRMAN. How much money the past year—that is, 1913—was allotted for this particular item, the inspection work as to the existence of contagious diseases?

Dr. MELVIN. No specific subdivision was made. The men were in our regular employ, but their expenses were charged to this sum of \$620,000, but no specific subdivision has been made under that heading.

The CHAIRMAN. Is the committee to understand that you carry this sum of \$620,000 in a lump?

Dr. MELVIN. Yes, sir.

The CHAIRMAN. And it was not subdivided in any of these branches?

Dr. MELVIN. No, sir.

The CHAIRMAN. Then, possibly, if you cared to do so, you could spend the entire amount on contagious diseases—I am speaking under the law?

Dr. MELVIN. Under the law, yes; but as a matter of practice it would hardly be possible.

The CHAIRMAN. But as a matter of fact it would have been legally possible to have spent the entire \$620,000 on southern cattle, for example, if you chose?

Dr. MELVIN. Yes, sir.

The CHAIRMAN. I will ask you, Doctor, to put into the record the amount of money that you have spent out of this lump sum during the present year, 1912, for the inspection work relative to the contagious diseases, and not only the amount but also to give a general itemized statement as to what diseases you have recognized and what work has been done under this item.

Dr. MELVIN. Put that in the record?

The CHAIRMAN. Yes, sir.

Expended from the lump-fund appropriation "General expenses, Bureau of Animal Industry, 1912 (inspection and quarantine)," during the period between July 1, 1911, and June 30, 1912.

Miscellaneous expenses in the office of the chief of the bureau.....	\$2,822.78
For the manufacture of tuberculin and mallein and the distribution of same to State officials, bureau officials, and other Government officials, for use in the work of testing cattle for tuberculosis and the testing of horses and mules for glanders.....	1,153.36
For the examination of samples of dips and disinfectants submitted by manufacturers, inspectors of this bureau, and other Government officials.	200.67

¹ Includes \$1,270 travel expenses of bureau officials attending meetings of U. S. Live Stock Sanitary Boards at Chicago and about \$1,400 for supplies for general use.

For the control and eradication of contagious diseases of animals.....	\$588, 512. 56
For general supervision and for miscellaneous items not otherwise classified.....	\$8, 571. 88
For supervising the transportation of live stock moving interstate, to ascertain if the Federal quarantine regulations are complied with, and for collecting evidence of the violations of such regulations.....	2, 333. 58
For the inspection of sheep for scabies, and for supervising the dipping of animals so affected; also for supervising the cleaning and disinfection of cars in which such animals have been shipped.....	274, 405. 45
For the inspection of cattle for scabies and for supervising the dipping of animals so affected; also for supervising the cleaning and disinfection of cars in which such animals have been shipped.....	174, 018. 44
For the inspection of sheep affected with, or exposed to, the disease known as lip and leg ulceration and for supervising the area quarantined on account of this disease.....	1, 001. 45
For the inspection and testing of cattle moving interstate for purposes other than immediate slaughter, in compliance with the laws of the States to which destined; also for the inspection and testing of horses and mules intended for interstate movement.....	28, 592. 42
For supervising the movement of cattle out of the area quarantined for Texas fever, to markets for slaughter, and for cleaning and disinfecting cars in which such animals were shipped.....	25, 388. 36
For the slaughter of animals affected with dourine, and for other expenses incidental to cooperative work with the State of Iowa, in the eradication of an outbreak of such disease in that State.....	1, 834. 78
For supervising the enforcement of the so-called 28-hour law and the collection of evidence of alleged violations thereof, in cooperation with the United States attorneys in charge of the prosecution of such cases.....	3, 033. 27
For maintaining the animal quarantine stations at the ports of entry of Boston, Mass., New York, N. Y., and Baltimore, Md.....	10, 007. 65
For the inspection, testing, and quarantine of animals for export and import along the Canadian border.....	25, 732. 36
For the inspection and tuberculin testing of dairy cattle in cooperation with State and municipal officials, with a view of developing herds free of tuberculosis.....	20, 167. 61
For the inspection and testing of animals for importation along the international boundary line between the United States and Mexico.....	13, 425. 31
Total expenditures under the inspection and quarantine appropriation.....	592, 689. 37

The CHAIRMAN. Now, then, taking up these tuberculin and mallein tests, the tuberculin test relates to tuberculosis in cattle, does it not?

Dr. MELVIN. Yes, sir.

The CHAIRMAN. And in hogs also?

Dr. MELVIN. Not so much. We have experimentally tested hogs with tuberculin, but it is not a very practical test for hogs.

The CHAIRMAN. As a matter of fact, what activities has the department taken in recognizing the increase of tuberculosis in hogs?

Dr. MELVIN. We have always felt that tuberculosis in hogs was primarily contracted by them from cattle, and that if tuberculosis in cattle was eradicated it would necessarily follow that tuberculosis of hogs would also cease; and we have thought that all activity along that line should be directed toward reducing it or eradicating it in cattle, rather than in hogs, on that account.

The CHAIRMAN. As a matter of fact, would the work of your section indicate that tuberculosis is spreading in hogs?

Dr. MELVIN. Yes; our meat-inspection records indicate that.

The CHAIRMAN. And spreading quite rapidly?

Dr. MELVIN. In about the same proportion as with cattle.

The CHAIRMAN. And up to the present time you are acting on the theory that hogs contract it from cattle?

Dr. MELVIN. Yes, sir.

The CHAIRMAN. You are therefore doing no work primarily upon hogs for tuberculosis, are you?

Dr. MELVIN. No, sir.

Mr. SLOAN. But it might be contracted by one hog from another just as easily, might it not?

Dr. MELVIN. It is rather doubtful. As a matter of fact, we do not find many so-called "generalized" cases of tuberculosis in hogs. The majority of them are localized cases, and I do not think the per cent of cases that would spread tuberculosis among hogs—that is, from one hog to another—are very many.

The CHAIRMAN. Upon that question, right there, generalized tuberculosis is a later form of tuberculosis than local tuberculosis, is it not?

Dr. MELVIN. It is a later form and indicates a general infection of the system of the animal.

The CHAIRMAN. Tuberculosis ordinarily appears first in its local form, does it not?

Dr. MELVIN. Usually; yes.

The CHAIRMAN. Later on it reaches the generalized stage, does it not?

Dr. MELVIN. In hogs it seems to have a tendency to become localized and stay that way and not become generalized.

The CHAIRMAN. I am not speaking about hogs now, but, in a general way, that represents the progress of the disease from the local to the generalized, does it not?

Dr. MELVIN. Yes, sir.

The CHAIRMAN. Would the fact that hogs are butchered at a much younger age than cattle have anything to do with the fact that you find it localized more often in hogs than in cattle?

Dr. MELVIN. It undoubtedly has considerable to do with it, but the condition of the lesions rather indicates that its spread within the animal is not continuous; that these foci became calcified; that these lesions in the lymphatic glands become calcified and apparently would remain in that condition unless some new infection was received, so that it does not seem to be as progressive a disease as in cattle.

The CHAIRMAN. Do you mean by that general statement to say that a hog is more resistant to tuberculosis than a cow?

Dr. MELVIN. No; I could not say that, because experimentally hogs become infected quite easily; but for some reason, I do not know why, it does not seem to have the effect of going on and continuing into a generalized form of tuberculosis the same as it does with cattle.

The CHAIRMAN. Taking up the subject of mallein, what is it?

Dr. MELVIN. Mallein is a preparation prepared from glanders bacilli, which are afterwards filtered out of this preparation and which may be injected into horses, and usually when they are affected it will give a reaction consisting of an elevation of temperature and a large swelling at the place where the subcutaneous injection was made. It is used as a diagnostic agent only, not as a cure.

The CHAIRMAN. To diagnose what disease?

Dr. MELVIN. Glanders.

The CHAIRMAN. This, then, relates to glanders?

Dr. MELVIN. Yes, sir.

The CHAIRMAN. As to what particular phase of this infection and quarantine work, and others that you have described, was your fund deficient for, or the work seemed to indicate that you needed more money for?

Dr. MELVIN. Our estimate for the coming year?

The CHAIRMAN. I am not speaking particularly about your estimate. I just want to know on what phase of it your work is increasing in such a way that your last appropriation was insufficient.

Dr. MELVIN. We were unable to take up tuberculosis work as much as we would like. We had requests from different States to assist them in cooperative work looking to the eradication of tuberculosis, and we were unable to do so on account of our funds being engaged in other activities; that is, to the extent to which we were called upon.

The CHAIRMAN. Then, as a matter of fact, if you had had more money you would have spent more money on tuberculosis, would you not?

Dr. MELVIN. We would have done that, and we would have spent more money on hog-cholera work. We have had many requests for assistance which we were unable to comply with.

The CHAIRMAN. If you had spent more money on the hog cholera, would you have spent it out of this particular item?

Dr. MELVIN. I think the general field work should come out of this item, although the funds which we have used heretofore have been spent out of the item providing for scientific investigations of diseases of animals. We think this has reached a stage where it is beyond the experimental stage and should be used in a practical way.

The CHAIRMAN. If you were going to demonstrate, then, to the farmers the efficacy and the proper mode of serum treatment, it would necessarily come out of this particular item, would it not?

Dr. MELVIN. The one for inspection of quarantine work?

The CHAIRMAN. No; under this lump sum of \$620,000.

Dr. MELVIN. Yes, sir.

The CHAIRMAN. Coming to the next item, "For all necessary expenses for the eradication of the southern cattle tick, \$250,000," is that the amount you spent this past year or this present year?

Dr. MELVIN. Yes, sir.

The CHAIRMAN. What does that work consist of?

Dr. MELVIN. That is a cooperative piece of work with the various Southern States—I think all Southern States are engaged in that work with the exception of Florida. We provide part of the force, the main force, the leading force, and the State provides what force they can. It consists in the systematic dipping in an arsenical solution of cattle so as to rid them of these ticks, with the idea of relieving these sections, as soon as the ticks are eradicated, from quarantine. This requires a farm-to-farm campaign and the confining of cattle during the time it is necessary to undergo treatment.

The CHAIRMAN. How long has this work in the eradication of the southern tick been under progress in your department?

Dr. MELVIN. The first fund providing specifically for this was, I think, during the fiscal year of 1906.

The CHAIRMAN. The basis of this, as I understand it, is the dipping of animals?

Dr. MELVIN. Yes, sir.

The CHAIRMAN. And it is the dipping which kills the ticks?

Dr. MELVIN. Yes, sir.

The CHAIRMAN. And in that way destroys them. How do the ticks spread from one animal to the other?

Dr. MELVIN. After the female has become fertilized by the male on the cow or other animal, she drops to the ground and lays her eggs under some grass or leaves or in some secluded place, then these eggs hatch out and the young animals crawl up the stalks of the grass or weeds or vegetation, and when the cattle brush against them in passing along they attach themselves to the animal and crawl up their legs and become attached to the skin and remain there until the time arrives for mating.

The CHAIRMAN. The method of eradicating the ticks is thoroughly understood, is it not, Doctor?

Dr. MELVIN. Yes, sir.

The CHAIRMAN. So there are not any new phases, it is simply the application of known scientific facts, is it not?

Dr. MELVIN. Yes, sir.

The CHAIRMAN. And in that work, as I understand you, your department spent last year \$250,000?

Dr. MELVIN. Yes, sir.

The CHAIRMAN. To carry this work to the individual farmers in the South?

Dr. MELVIN. Yes, sir.

The CHAIRMAN. This year I see under the terms of the appropriation bill, if it goes into effect, there is an increase of \$75,000 for this work?

Dr. MELVIN. Yes, sir.

The CHAIRMAN. I see, as reported to the House, it is \$325,000. This \$325,000, if it should become enacted into law, will again be used in this work of destroying the tick, in carrying the work to the individual farmers, and upon the individual farms?

Dr. MELVIN. Yes, sir.

The CHAIRMAN. How much actual money is being appropriated by the individual States collectively, taking all the States together?

Dr. MELVIN. This past year I think they will spend about an equal amount with the Government.

The CHAIRMAN. Take the next article, "for all necessary expenses for investigations and experiments in the dairy industry, cooperative investigations of the dairy industry in the various States, inspection of renovated butter factories and markets, \$177,900," is it not?

Dr. MELVIN. \$177,900. We had asked an increase to \$200,000 on that item, which I see has not been granted by the committee.

The CHAIRMAN. "For all necessary expenses for investigations and experiments in animal husbandry, \$52,180." How much have you spent under that item this past year?

Dr. MELVIN. \$52,180.

The CHAIRMAN. Will you tell us just exactly what is comprehended under "necessary expenses for investigations and experiments in animal industry"? What line of work have you carried on under that appropriation?

Dr. MELVIN. We have an experiment station, located at Beltsville, Md., where we are conducting experiments in poultry, with breeding of poultry and egg production and poultry feeding, and also experiments in swine; also with milk goats. We have some experiments under that division with some of the States in carrying on animal husbandry investigations.

The CHAIRMAN. What experiments are you carrying on over there at your farm under poultry?

Dr. MELVIN. We have several varieties of poultry that are being bred, and I think some cross-breeding is being done. At the same time they are doing this they are studying methods of housing and of feeding to determine the best kinds of feed to use to produce the best birds for table and for egg production.

The CHAIRMAN. Is your department taking up any work looking to the diseases of poultry?

Dr. MELVIN. We are studying the diseases of poultry. That comes under another subheading. "Investigation of diseases of animals."

The CHAIRMAN. While I am asking about it I shall ask you what specific work have you done, for instance, on the disease known as the "black head" of turkeys?

Dr. MELVIN. We did considerable work on that for several years. I think during the past year we have not done any work on that.

The CHAIRMAN. Have you found any remedy for it?

Dr. MELVIN. No specific remedy except in a preventive way.

The CHAIRMAN. What causes the disease, Doctor?

Dr. MELVIN. It is due to a low form of animal life known as "protozoa."

The CHAIRMAN. It really attacks the liver of the turkey, does it not?

Dr. MELVIN. Yes, sir; it has another name, entero-hepatitis, indicating disease of the liver and intestines.

The CHAIRMAN. The loss from that disease in the Middle West is very great, so much so that a great many farmers have been driven entirely out of the business of raising turkeys, and you have found no remedy for it, have you?

Dr. MELVIN. No, sir.

The CHAIRMAN. There is one point I wish to speak about in taking up the subject of the diseases of poultry. In diseases of poultry, as in diseases of swine, vast amounts of money have been spent in cures for cholera. People ought to be protected against that. If there is not any cure for cholera, fakirs ought not be allowed to go around and sell a little package for 50 cents, and millions and millions of dollars are spent for it, without question, throughout the country. You can not go into a western drug store but you will find a shelf full of hog and poultry cholera cure.

What are the investigations you are conducting on swine over there at your farm?

Dr. MELVIN. Those are a mixture of feeding and breeding experiments. Just at this time I am not familiar enough to go into it in detail. We have, however, taken the precaution to immunize these hogs with our serum and vaccine treatment; that was recently done, and very effectively.

The CHAIRMAN. I understand that most of this money, then, is being spent on your experiment farm here in Maryland?

Dr. MELVIN. A greater part of it; yes, sir.

The CHAIRMAN. Coming to the next item, "For all necessary expenses for scientific investigations in diseases of animals, including the maintenance and improvement of the bureau experiment station at Bethesda, Maryland, and the necessary alterations of buildings thereon, and the necessary expenses for investigations of tuberculin serums, antitoxins, and analogous products, \$78,680." How much of that have you spent on that this present year?

Dr. MELVIN. We spent all of it.

The CHAIRMAN. Do you carry that in just a lump sum?

Dr. MELVIN. Yes, sir.

The CHAIRMAN. And there is no division on it?

Dr. MELVIN. No, sir; no futher than this. It is very difficult to make any greater subdivision of that. Our hog-cholera work comes out of that; our study of diseases, such as blackhead in poultry, and other poultry diseases, comes out of that; also any swine diseases; parasitic diseases of sheep, which we have been studying—all of those are paid out of that fund, and from year to year they vary in kind and extent. Some projects will need more money one year and less the next, and we can use it best in that form.

The CHAIRMAN. The Committee understands this is a sum set aside for the original scientific investigation into the cause of diseases and how to cure them; is that right?

Dr. MELVIN. Yes, sir.

The CHAIRMAN. Inasmuch as you have not been studying the hog cholera in that form for some years, the committee understands you have spent no money out of this appropriation for hog cholera?

Dr. MELVIN. We have been conducting some investigation work on hog cholera at our Ames farm, and what money has been spent has come out of this fund.

The CHAIRMAN. How much money have you spent out of this fund the past year exclusively for hog cholera?

Dr. MELVIN. Approximately \$12,500; \$9,172.73 from "Diseases of animals" and \$2,986.67 from "Meat inspection."

The CHAIRMAN. How much of that \$12,500 is spent for salaries and how much for traveling expenses? Let us get that itemized for the committee.

Dr. MELVIN. I can give that amount a little more definitely. It is \$12,159.40.

The CHAIRMAN. Give the committee the main items under that.

Dr. MELVIN. The salaries, \$5,236.67; the travel was \$722.47; miscellaneous, \$6,200.26. I presume that the miscellaneous item will include principally the cost of hogs and rental of farm and item of feed and items of that nature.

The CHAIRMAN. Were any other diseases of domestic animals taken up by your bureau other than this on hogs this past year? Under this item of \$70,680, the committee would like to know precisely how much of this lump sum was spent under this first heading, "Diseases of animals."

Dr. MELVIN. We have spent practically all of that, as indicated, for those purposes. We are now studying, at quite a considerable expense, the effect of spoilt grains and sulphured oats upon horses, if any. We have some work under tuberculosis; that is, immunizing against tuberculosis of cattle, that we are carrying on under that

item. The study of the nodular diseases of the intestines of sheep is being conducted there. The expenses of our laboratories at Washington and at Bethesda are maintained out of this amount.

The CHAIRMAN. How much are you spending out of this item for the maintenance and improvement of the Bureau of Experiment Station over here in Maryland?

Dr. MELVIN. The maintenance would include, of course, the help to take care of the animals, and we grow some forage there. We have not made any improvements of any considerable extent during the present or the past year at Bethesda. The language is carried from year to year in order that if we should find it necessary to put up a small building we might have it, or to make some alterations to meet the requirements of some particular investigation, but in fact there have not been many alterations there or changes in the farm.

The CHAIRMAN. I will ask you to place in the record a complete itemized statement of this particular item, \$78,680, showing just precisely what it has been spent for.

Expended from the lump-sum appropriation "General expenses, Bureau of Animal Industry, 1912, (diseases of animals)" during the period between July 1, 1911, and June 30, 1912.

For investigations and experiments in the study of animal diseases, with a view of developing methods for the eradication and control thereof.....	\$12,858.20
For experiments and investigations in the study of hog cholera, and for conducting experiments concerning the practical application of anti-hog-cholera serum for combatting hog cholera.....	9,172.73
For experiments and investigations in cooperation with the Pennsylvania Live Stock Sanitary Board, in the study of milk hygiene.....	1,387.40
For miscellaneous investigations and experiments in studying infectious animal diseases.....	3,742.55
For investigations of the frozen and dessicated egg industries, with special reference to the bacterial content of the finished products and the sources of contamination.....	1,939.52
For miscellaneous experiments and investigations in the study of round-worms, gid, and tapeworms in sheep, parasites of hogs, and measles of sheep and cattle, and the treatment of cattle mange.....	10,245.77
For repairs, improvements, and general maintenance of the Experiment Station, Bethesda, Md., and for conducting experiments and investigations there, concerning the study of tuberculosis, Texas fever, and other diseases of animals.....	30,691.57
Total expenditures under the appropriation for diseases of animals..	70,037.74

Mr. SLOAN. Will you state, approximately, the amount of money appropriated by the several States for the eradication of hog cholera, using the serum treatment?

Dr. MELVIN. Yes; we can supply that.

The CHAIRMAN. I will venture it as a guess, and will look it up more accurately, that the State of Indiana is spending more money on the question of hog cholera than the United States Department of Agriculture is, as shown by the doctor's testimony. Part of that, however, will probably be reimbursed by the sale of the serum to the farmers.

States manufacturing and distributing hog-cholera serum.

[Amount available annually.]

Arkansas, \$2,000.

California, \$8,000.

Delaware, a very small sum from funds of live stock sanitary board, amount not known.

Georgia, \$5,000.

Illinois, \$22,500.

Indiana, indefinite amount, supposed to be secured from experiment station fund.

Iowa, \$2,500.

Kansas, \$3,000 to begin work; serum distribution then self-supporting through sale of serum.

Kentucky, \$10,000 to \$15,000.

Maryland, \$5,000

Michigan, \$15,000 to start, then self-supporting through sale of serum.

Minnesota, \$6,000, partially derived from sale of serum.

Mississippi, \$5,000.

Nebraska, \$1,500, appropriated in 1911 to be used to start the plant; serum to be sold at cost.

New York, no definite amount; meager fund available from college appropriation.

North Carolina, \$1,000.

North Dakota, about \$3,000.

Ohio, no specific amount. May use as much as \$40,000 for salaries and other expenses.

Oklahoma, \$3,750.

Pennsylvania, \$25,000, part of this to be used for preparation of hog-cholera serum.

South Carolina, \$1,500 from college fund.

Texas, no information.

Wisconsin, initial appropriation about \$600.

Missouri, about \$25,000.

South Dakota, amount not known.

Louisiana, amount not known.

States which do not manufacture, but which purchase and distribute serum.

Florida, no definite amount; from public-health fund.

Maine, amount not known.

Vermont, no definite amount.

Virginia, \$3,000 to begin; subsequent fund derived from sale of serum.

Total amount now being expended annually by the States exceeds \$100,000.

STATEMENT OF DR. M. DORSET, DIVISION CHIEF, BUREAU OF ANIMAL INDUSTRY.

Mr. SLOAN. What is your position in the Bureau of Animal Industry?

Dr. DORSET. Chief of the Biochemic Division.

Mr. SLOAN. How long have you been so engaged?

Dr. DORSET. I have been in that position since 1904.

Mr. SLOAN. How long have you been connected with the Bureau of Animal Industry?

Dr. DORSET. Since 1894.

Mr. SLOAN. Have you and some of your coworkers in the Bureau of Animal Industry devoted time to the investigation and discovery and development of a serum calculated to be a preventive for hog cholera?

Dr. DORSET. Yes, sir; that work has been going on practically ever since I have been in the Bureau of Animal Industry.

Mr. SLOAN. Will you state when the work was begun? Go a little into the history of its development, and, among other things, state the manner of production of this serum, just in your own way.

Dr. DORSET. I believe that the Bureau of Animal Industry began to study hog cholera from the time of its organization, in the early eighties, and as a result of those early investigations, about the year 1889, or possibly earlier, they discovered a germ similar to the typhoid germ, that they decided—the men in the bureau at that time decided—was the cause of the disease. This was called the hog cholera bacillus, and was generally accepted all over the world as the cause of hog cholera. Later, at the time I entered the bureau, efforts were being made to secure some sort of serum to prevent hog cholera by the employment of this germ, which was supposed to be the cause. Serums are generally prepared by inoculating animals with the products of the germ that causes the disease, or with the germ itself. In this case this hog cholera germ was being employed, and animals, such as horses and cattle, were inoculated, and the serum from those animals was drawn and used to treat hogs to prevent hog cholera in the field. I did a large amount of field work with that serum myself up until about the year 1901, possibly later than that. The work at that time was under the direction of my predecessor, Dr. de Schweinitz. Dr. de Schweinitz about that time came to doubt that this so-called germ of hog cholera was the real cause of it. He made a good many experiments to see if he could find out the real cause. He thought the hog lice transmitted it. He tried to find out if that was so. He thought a germ like the malarial organism, in the blood of hogs, caused it. While these investigations were in progress, and before they reached positive determination, Dr. de Schweinitz was taken sick, first in the summer of 1903, and died later, in February, 1904, at which time I succeeded him in charge of the division. About that time, and immediately subsequent thereto, experiments demonstrated that the disease is not caused by this germ that looks like the typhoid fever germ, at all, but that it is caused by an invisible organism that is so small that it passes through the finest porcelain filters, and is not discernible with microscopes of the highest power. The work of the division in that respect has been confirmed, not only in this country, but practically in all foreign countries, with reference to the similar disease in the foreign countries. I refer to the work of the Imperial Board of Health in Berlin, and to the Austro-Hungarian, and to the French and English authorities.

Our ideas of the cause of the disease being thus changed, we could understand why we had failed in the early efforts to produce a serum, because we were using a thing to produce the serum that did not cause the disease at all. So there was begun these first attempts to produce a serum by the method we use now; that was begun in the summer of 1903, under my personal direction, Dr. de Schweinitz being ill at that time. That early, first experiment was inconclusive, so that later, in 1905, we were first able to demonstrate conclusively by a sufficient number of experiments that if you take a hog that has recovered from hog cholera, or is immune from any other cause, and inoculate that hog with a sufficient amount of blood taken from a sick hog, the effect of that injection will be to heighten the immunity of the immune so that his blood serum will contain protective substances in such amount that comparatively small portions of this treated immune serum will protect nonimmune hogs from hog cholera. That is the way that serum was produced. I consider it was first definitely and absolutely established during the summer

of 1905. This being found, the serum was patented in 1906—a patent was taken out in my name and the rights were assigned to the Government and to anyone in the United States to use without the payment of royalty, which is the common custom.

The CHAIRMAN. At this point I should like to ask you whether all foreign rights were reserved?

Dr. DORSET. This was simply an American patent. The assignment that was made had nothing to do with the foreign rights.

The CHAIRMAN. As a matter of fact, it is a patented article in foreign countries, is it not?

Dr. DORSET. There have been patents taken out.

The CHAIRMAN. Those patents are held by—

Dr. DORSET. By myself, yes, sir, the few that were taken out.

The CHAIRMAN. Is Mr. McCabe interested with you in that patent?

Dr. DORSET. He is, I will say. There has been no change in it.

The CHAIRMAN. And was at the time it was taken out?

Dr. DORSET. Was at the time it was taken out.

The CHAIRMAN. At the time it was patented in foreign countries, both you and Mr. McCabe were both members of the Department of Agriculture, were you not?

Dr. DORSET. We were; yes, sir. I will say, if the Chairman will allow me, that these patents in foreign countries were applied for by me only after I had asked the permission of the Secretary of Agriculture to make application for them. He said he considered that inasmuch as I derived no pecuniary benefits whatever in this country, there should be no objection to my making application for patents in foreign countries.

The CHAIRMAN. Under the rules of the Department of Agriculture, were you prohibited from taking out a patent here in the United States?

Dr. DORSET. I do not remember what the rules were at that time.

The CHAIRMAN. Is it not a matter of fact that an employee of the United States Government, working on a salary and using the public funds to discover a matter of public interest, that he is prevented by the rules of the department from becoming the exclusive owner of that discovery?

Dr. DORSET. Mr. Chairman, I think that, if I am not mistaken, there has been since the time of this patent a law passed which makes such a provision. I quite agree that whether he is legally bound to do that or not, that he is certainly morally bound not to take private advantage of the discovery in the United States.

The CHAIRMAN. I will say that I did not intend to bring this matter up now, although I had intended to do so before we concluded the hearing, so I will ask you a question or two on that subject. Are you the owner of those foreign patents now?

Dr. DORSET. Yes, sir.

The CHAIRMAN. And you have been ever since it was patented?

Dr. DORSET. It was taken out in my name, all of the patents; yes, sir.

The CHAIRMAN. And are you deriving a revenue from it?

Dr. DORSET. No, sir; not one cent have I ever received.

The CHAIRMAN. Was there any restriction placed upon the use of this serum in foreign countries on account of the fact that you hold this patent?

Dr. DORSET. I do not think so, Mr. Chairman. I must confess that I think the foreign patents in the countries where they were originally secured—and there were only a few—have all lapsed through failure to prosecute the work of producing the serum, although I am not perfectly clear as to that. I confess I do not know. I do not think, though, the work is being hampered in any country on account of these patents.

The CHAIRMAN. Who joined with you in the application for the foreign patents?

Dr. DORSET. I understand you to mean who assisted me to finance the proposition?

The CHAIRMAN. I meant, it was taken out in your name, was it?

Dr. DORSET. Yes.

The CHAIRMAN. But not in your exclusive ownership?

Dr. DORSET. No, sir.

The CHAIRMAN. As you are employees of the Department of Agriculture, I still think it is within the province of the committee, but if it is not I do not wish you to answer it. Mr. Sloan will judge as to that. Other employees of the Department of Agriculture were joined with you in this work of taking out the foreign patents on this serum?

Dr. DORSET. I should like, if the Chairman will allow me, to state just exactly who was associated with me, because there was one man associated with me not connected with the department.

The CHAIRMAN. Of course you are at perfect liberty to state who was associated with you, although I have no right to inquire except as to the members of the Department of Agriculture.

Dr. DORSET. I am very glad indeed to make a full and free statement in regard to this, and if we do not have time for it to-day, I hope that I may sometime have the opportunity to give you and the committee the fullest information in regard to all this hog cholera work. I am very desirous and anxious to do it. There were associated with me my brother-in-law, Gilmer Meriwether, of Kansas City, Mo., who, according to my recollection, put up more than one half the money used in securing these patents. Col. S. R. Burch, formerly chief clerk of the Bureau of Animal Industry, put in \$100, and I put in personally \$100, and Mr. McCabe put in personally \$100. Dr. J. A. Emery was also interested. So far as I have knowledge, all of that money was spent on these patents, and there has never been one cent of revenue from them.

The CHAIRMAN. Your first application was for domestic patents, was it not?

Dr. DORSET. The first application was for domestic patents.

Further hearing adjourned until 10 o'clock a. m. Friday, January 24, 1913.

BUREAU OF ANIMAL INDUSTRY

HEARINGS

BEFORE THE

COMMITTEE ON EXPENDITURES IN THE DEPARTMENT OF AGRICULTURE

HOUSE OF REPRESENTATIVES

RELATING TO THE

BUREAU OF ANIMAL INDUSTRY

JANUARY 24, 1913

PART 2



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BUREAU OF ANIMAL INDUSTRY.

COMMITTEE ON EXPENDITURES IN THE
DEPARTMENT OF AGRICULTURE,
HOUSE OF REPRESENTATIVES,
Washington, D. C., Friday, January 24, 1913.

The committee met at 10 o'clock a. m., Hon. Ralph Moss (chairman) presiding.

Present: Representatives Hon. Ralph Moss and Hon. Charles H. Sloan.

STATEMENT OF DR. MARION DORSET—Continued.

The CHAIRMAN. Dr. Dorset, at what time do you consider that you began the study of the serum along the lines that finally gave you success?

Dr. DORSET. The first idea of producing serum of this sort, I find I have made a note of it, and it was in 1902. I can give you the exact date because I made it a practice to keep a notebook in which I inserted what original ideas occurred to me. This one is dated November 13, 1902.

The CHAIRMAN. What was your position at that time?

Dr. DORSET. I was Assistant Chief of the Biochemical Division.

The CHAIRMAN. Who was your immediate predecessor?

Dr. DORSET. Dr. E. A. de Schweinitz.

The CHAIRMAN. You spoke yesterday in regard to the first doubt that the department had in regard to the course they had been taking on the serum matter; you said this doubt first arose in the mind of your predecessor. At what time did that doubt enter his mind?

Dr. DORSET. It is impossible for me to say now.

The CHAIRMAN. Was it prior to this date, November 13, 1902?

Dr. DORSET. Yes, sir; it was. That was a doubt with regard to the cause of the disease.

The CHAIRMAN. But the fact of it being a doubt in regard to the cause of the disease finally resulted in an entirely new course of investigation by the department, did it not?

Dr. DORSET. Yes, sir; it did.

The CHAIRMAN. And that new course of investigation finally led to the discovery?

Dr. DORSET. Yes, sir.

The CHAIRMAN. At what date do you consider that the serum was perfected by the department?

Dr. DORSET. I consider that the first time we had definite knowledge that immunity could be produced in this way was in 1905.

The CHAIRMAN. And in the interim between 1902 and 1905 were you continuously employed by the Department of Agriculture?

Dr. DORSET. Yes, sir.

The CHAIRMAN. Did you do any work on this serum matter in any other capacity than that of an employee of the Government?

Dr. DORSET. No, sir; I did none.

The CHAIRMAN. When did you make your first application for a patent on this process?

Dr. DORSET. I have the original patent here. The application was filed February 7, 1906.

The CHAIRMAN. That application was filed by you, was it?

Dr. DORSET. Yes, sir; filed in my name.

The CHAIRMAN. In making an application for the patent did you allege this to be an original discovery by yourself?

Dr. DORSET. Yes, sir; I did.

The CHAIRMAN. As an individual or as an officer of the Department of Agriculture?

Dr. DORSET. I am not able to say how the application was drawn exactly, Mr. Chairman; the whole matter was conducted by the solicitor for the department, who filed the application. I do not know just how it was filed.

The CHAIRMAN. You say the application was filed by Mr. McCabe?

Dr. DORSET. Yes, sir.

The CHAIRMAN. Mr. McCabe was at that time solicitor of the department, was he not?

Dr. DORSET. He was.

The CHAIRMAN. Was he acting in his capacity as solicitor for the department?

Dr. DORSET. Yes, sir.

The CHAIRMAN. Have you a copy of the application?

Dr. DORSET. I have a copy of the patent, which I think must be a copy of the application. I might correct my previous answer and say that I find in the patent that my declaration at the opening states:

Be it known that I, Marion Dorset, a citizen and officer of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful improvements in the manufacture of hog cholera anti-toxin, of which the following is a specification.

The CHAIRMAN. In your application for a patent you applied to take out a patent which would cover the territory of the United States, did you not?

Dr. DORSET. Yes, sir.

The CHAIRMAN. At the same time you also made applications in what other countries?

Dr. DORSET. The application in foreign countries was not made until later.

The CHAIRMAN. You did, however, make applications in what foreign countries?

Dr. DORSET. I believe that the list that I will give you is correct. It is, to the best of my knowledge. The foreign countries are Canada, France, Spain, Denmark, Norway, Sweden, England, Germany, and Italy.

The CHAIRMAN. Assuming that these patents for which you applied had all been granted, would not that have given you an absolute monopoly of the preventative cure of hog colera, so far as the known world is concerned, speaking in a hog-raising sense?

Dr. DORSET. No; I should say it would have had no effect upon the United States.

The CHAIRMAN. Did you not make an application for the United States?

Dr. DORSET. Yes; but in the application for the United States it was provided that the invention described may be used by the Government, or by any of its officers or employees in the prosecution of work for the Government, or by any other person in the United States without the payment of any royalty thereon, so that the object of taking out the patent in the United States was to secure its free use to the entire people, without the payment of any royalty, and to prevent the patenting of the same process by any individual for his private benefit.

The CHAIRMAN. Then it was not your purpose at any time to secure or attempt to secure any fees of any kind from the people of the United States, or for a monopoly in the United States?

Dr. DORSET. No, sir; absolutely not.

The CHAIRMAN. You say that patent was granted?

Dr. DORSET. It was granted with essentially the provisions I have just read, and the original is here.

The CHAIRMAN. As a matter of fact, Doctor, would not a prompt publication of this formula by the Government of the United States have been effectual in preventing any other man from patenting it in the United States?

Dr. DORSET. I am not familiar enough with the patent laws to answer, Mr. Chairman.

The CHAIRMAN. As a matter of fact, can anyone patent that which he does not invent?

Dr. DORSET. No, sir.

The CHAIRMAN. Can he patent anything except a new and original idea?

Dr. DORSET. That is my understanding.

The CHAIRMAN. Then, as a matter of fact, if this discovery had been made known by the publication by the United States Government, would it be reasonable to suppose that any other man, under the patent laws, could have taken out a patent?

Dr. DORSET. I do not know.

The CHAIRMAN. What is the regulation at the present time about an officer or employee of the Department of Agriculture who makes an original discovery while engaged in his official work in taking out a patent?

Dr. DORSET. So far as I am aware, there are two circulars from the Secretary of Agriculture bearing upon this point. One is dated May 8, 1905, which is a department order. Shall I file a copy of this with the record? This prohibits an employee of the department from patenting any discovery or invention which has been made through the expenditure of Government time and money or while connected with the department. I will say that the second circular from the department is a copy of an act of Congress approved June 25, 1910, which, I believe, prohibits the patenting of any device discovered or invented by an employee during the time of his employment or service.

The CHAIRMAN. Is it your idea that those two orders, preventing an employee from making a patent—that if some officer of the Gov-

ernment were to make an original discovery, as, for instance the hog-cholera serum, and not patent it, that it would be possible for some one to patent it, and thus secure a monopoly of it?

Dr. DORSET. I believe that was the idea when this patent was taken out. Now, I will tell you that the idea of patenting this process had never occurred to me. It did not occur to me originally, but my recollection—while I have no record of the fact, my recollection is that I received word one day, probably the latter part of 1905, that the Secretary desired me to patent this process. It may have been that the idea was to protect the people from me. I have no idea what the Secretary's ideas were, but I had not thought of it up to that time, and, of course, I never should have applied for a patent as an individual, and I do not know that I would ever have thought of applying for it as I did finally.

The CHAIRMAN. Do you recall who brought you that information?

Dr. DORSET. I think, although I can not say positively, that I received a telephone message either from solicitor's office or from Dr. Melvin, the chief of the bureau. That I can not say positively.

The CHAIRMAN. As a matter of fact, was not the patenting of it in the United States a first step to secure foreign patents?

Dr. DORSET. No, sir.

The CHAIRMAN. Do you know whether or not you could have taken out patents in foreign countries without first having taken them out in the United States?

Dr. DORSET. I do not.

The CHAIRMAN. Did you ever investigate that phase of it?

Dr. DORSET. No, sir.

The CHAIRMAN. Did Solicitor McCabe request you to give him and his associates permission to have this patented?

Dr. DORSET. In the United States, do you mean?

The CHAIRMAN. Yes.

Dr. DORSET. No, sir.

The CHAIRMAN. When Solicitor McCabe drew up this application for a patent in the United States do you know whether or not he was acting under orders from the Secretary?

Dr. DORSET. I do not know. I suppose he was. That has been my supposition.

The CHAIRMAN. Did you have that idea at that time?

Dr. DORSET. Yes, sir; I am sure I had.

The CHAIRMAN. Did you have knowledge that a certain idea which originated in the Weather Bureau was sought to be patented under practically the same terms that this serum was patented and that it brought up a controversy similar to the one we are discussing?

Dr. DORSET. No, sir.

The CHAIRMAN. You never heard of anything of that kind?

Dr. DORSET. I never heard of it.

The CHAIRMAN. You stated yesterday that the expenses of this application were borne jointly?

Dr. DORSET. Yes, sir; the expenses of the foreign patents were borne jointly. There was no expense in taking out the patents in the United States.

The CHAIRMAN. Was there a corporation drawn up?

Dr. DORSET. No, sir; there were never any articles of agreement signed.

The CHAIRMAN. What was the general condition under which you gentlemen were contributing jointly to the expense of having these patents taken out?

Dr. DORSET. The matter of taking out foreign patents, to the best of my recollection, was first suggested to me by my brother-in-law in Kansas City, who knew of the work I had done, and who knew I had previously patented the article in the United States, and I took it up first with him. He and I arranged to make application for foreign patents in certain countries, and he suggested to me that I might be able to get patents in more countries than he was able to furnish the money for, if I could secure others to go in with me and apply for more patents in more foreign countries. That is the way the thing originated. I do not know whether I have fully answered your question or not.

The CHAIRMAN. I do not think you have answered it.

Dr. DORSET. I want to give you the story of how it originated.

The CHAIRMAN. The point I wished to get at is this, that men rarely ever contribute money unless they expect money will be returned to them. What I wish to know is, under what agreement you were acting by which people were contributing money; how the profits were to be divided?

Dr. DORSET. It was understood that I, as the inventor of the process, was to have one-half of the proceeds.

The CHAIRMAN. And the other half was to be divided among the others?

Dr. DORSET. The other half was to be given to those who contributed the money; and, as I contributed some myself, I was to share in that in proportion to the money I put in, in addition to my rights as inventor.

The CHAIRMAN. One-half of the total profits were to come to you as the originator and the other half to be prorated as the proportion of the expenses of taking out the patents?

Dr. DORSET. Yes, sir.

The CHAIRMAN. Do you consider that you were, in the sense that it is necessary to secure a patent, the originator of this idea?

Dr. DORSET. Yes, sir; without question.

The CHAIRMAN. And you consider that in your work in the Department of Agriculture you were not correlated with other men in any helpful degree, so that with you remains the distinctive sense or right of being the inventor or the originator of this idea?

Dr. DORSET. Mr. Chairman, there is absolutely no question that I originated the idea. I did have, in the department, the assistance of certain men, who carried out certain experiments under my direction, but the invention was mine.

The CHAIRMAN. What do you consider was the invention?

Dr. DORSET. I consider the invention was the new idea that hog cholera could be prevented by the preparation of a serum in the manner I described here yesterday.

The CHAIRMAN. That was the thing you were patenting?

Dr. DORSET. Yes, sir.

The CHAIRMAN. That is, the real process of making this serum?

Dr. DORSET. Yes, sir.

The CHAIRMAN. You do not claim, do you, Doctor, that you did the thinking that lead up to the cause—I mean all the original think-

ing and experimentation that lead up to the establishment of the cause of hog cholera and finally brought it to the point where it was possible to make serum?

Dr. DORSET. I consider that I was the chief one concerned in that discovery.

The CHAIRMAN. You made application for these foreign patents. Were they issued to you?

Dr. DORSET. They were in some cases.

The CHAIRMAN. What countries issued you patents?

Dr. DORSET. Canada, where the patent has now lapsed. Do you want the present condition of the patents?

The CHAIRMAN. No; I want the first countries where patents were issued to you.

Dr. DORSET. Canada, France, Spain, Denmark, and I have no record as to Norway and Sweden. I do not know whether they did or not. The patents were disallowed in England, Germany, and Italy.

The CHAIRMAN. Will you state to the committee on what grounds they were disallowed?

Dr. DORSET. I regret that I am unable to do that; it was taken up through the patent attorneys, and I do not know.

The CHAIRMAN. Have you transferred your interest in any of these patents or assigned them to any person?

Dr. DORSET. I have not.

The CHAIRMAN. You hold the patents in just the form they were issued to you, do you?

Dr. DORSET. They were all issued to me as an individual.

The CHAIRMAN. And you have not transferred or assigned any rights to anyone in these patents?

Dr. DORSET. No, sir.

The CHAIRMAN. At any time have you sought, or has any person associated with you sought to enforce your rights as the patentee, as the holder of the patents, in any of these countries?

Dr. DORSET. No, sir; with this possible exception, that I was advised—I do not now know just how—that the rights in Canada would lapse if work was not done before a certain date, and I then communicated with an acquaintance of mine in Canada and asked him to undertake the preparation of serum there according to this method, as an agent of mine, and he started to do it, but was not successful and never produced any serum. That is the only thing that has been done.

The CHAIRMAN. Did you ever make any demand upon any person for the payment of royalties?

Dr. DORSET. No, sir.

The CHAIRMAN. Did you ever receive any royalties?

Dr. DORSET. I never received a cent.

The CHAIRMAN. And with the exception of the statement you have made with reference to Canada, you did not attempt to protect your rights at any point?

Dr. DORSET. No, sir.

The CHAIRMAN. Did any of those persons associated with you attempt to do so?

Dr. DORSET. Not to my knowledge. I do not think they could have done it because the patents, as I say, stand in my name as an individual and they would not appear on the patents or have any connection with them.

The CHAIRMAN. As a matter of fact, is the serum being used in any of these countries in which these patents were issued?

Dr. DORSET. I can not answer positively. I do not know. It may be in foreign countries.

The CHAIRMAN. So far as you know, then, none of the foreign countries is receiving any of the benefits of the discovery made by the United States?

Dr. DORSET. I will say, Mr. Chairman, that the serum is being made extensively in some foreign countries, but as to those in which I received the patent, I do not know.

The CHAIRMAN. Is it being used in any of those countries where you did not receive the patents?

Dr. DORSET. Yes, sir.

The CHAIRMAN. Then, as a matter of fact, those countries where it is patented have not used the process and those countries where it is not patented have been using the process. That is the statement, is it not?

Dr. DORSET. That may be correct. The cause for that, I believe, is owing to the prevalence of the disease and to the position and attitude of officials of the Government. In England the officials there seem to have felt that the method was not exactly as good as it ought to be, or something of that sort, so that is one country where I did not get a patent where they are not using it to any extent. The same is true in Italy, so far as my knowledge goes.

The CHAIRMAN. Have you renounced your rights as a patentee in any of the countries?

Dr. DORSET. No, sir.

The CHAIRMAN. Have you given consent to any of the countries to use it without payment of royalty?

Dr. DORSET. No, sir.

The CHAIRMAN. Then, so far as any rights you obtained under the patent, you still hold them, do you not?

Dr. DORSET. I believe that the patents in all countries, certainly in four, have lapsed and that the right to use the method is free to people in those countries now.

The CHAIRMAN. If it did lapse it lapsed by termination and not by any affirmative action on your part, did it not?

Dr. DORSET. By failure on my part to conform to certain patent requirements in those countries—such as working the patent.

The CHAIRMAN. Did you advise the Secretary of Agriculture, your superior, of your purpose to take out these patents before they were taken out?

Dr. DORSET. Yes, sir; I asked his permission in a letter December 1, 1906.

The CHAIRMAN. I shall be glad to have that letter placed in the record.

Dr. DORSET. May I place a copy of it in the record and keep the original?

The CHAIRMAN. Yes; just read it.

Dr. DORSET (reading) :

DECEMBER 1, 1906.

The honorable the SECRETARY OF AGRICULTURE

(Through Dr. A. D. Melvin, Chief Bureau of Animal Industry).

SIR: As you are aware, I have patented a method for immunizing hogs from hog cholera. The rights to use this patent have been assigned to any person in the United States. If you have no objection I should like to patent this same process in foreign countries, my intention being to sell the rights or secure royalties on the use of this method in such countries, if it shall prove to be of practical value. I will probably have associated with me one or two other men in the attempt to secure foreign rights. It goes without saying that I will have no connection whatever with the manufacture of this material in the United States.

I respectfully request that I be notified promptly whether you have any objection to my patenting this process in foreign countries for my personal benefit, in the manner outlined above.

Very respectfully,

(Signed) M. DORSET,
Chief Biochemic Division.

To which I received the following reply from the Secretary of Agriculture:

DECEMBER 4, 1906.

Dr. MARION DORSET,

Chief Biochemic Division, Bureau of Animal Industry.

DEAR SIR: I have received, through the Chief of the Bureau of Animal Industry, your application dated December 1, 1906, for permission to take out patents in foreign countries on the method of immunizing hogs from hog cholera patented by you in the United States for the public benefit. I see no objection to your patenting this process in foreign countries for your personal benefit as outlined in your letter, and have accordingly approved your application.

Respectfully,

(Signed) JAMES WILSON,
Secretary.

I will say, Mr. Chairman, that this action of the Secretary, so far as I know, was not a special or individual case, but represents a custom of the department. There have been other men, I believe, in the department, who have been given similar privileges, and it might be well if I insert a statement recently made by the Secretary of Agriculture before the Committee on Agriculture of the House of Representatives on January 4, 1913, in which he says, referring to taking out patents by department employees:

But our department regards anything done of that kind by one of our scientists, to whom you are paying a salary and whose expenses you are paying—we expect that that discovery shall be patented in the name of that man for the benefit of the American people within the United States. If he can sell it abroad we let him do it.

Thus indicating the general policy of the department.

The CHAIRMAN. These are all the questions I care to ask at this time.

Mr. SLOAN. Touching the purpose of this patenting, is not that application made for and on behalf of the United States, so that the patent, once granted, will almost conclusively prevent the patenting by anybody else of substantially the same idea, or of raising a question of fact before the Patent Office or elsewhere as to who the discoverer of the method, substance, or appliance might be?

Dr. DORSET. That was my understanding.

Mr. SLOAN. Then, if as a matter of fact, the United States had not patented this process, but merely announced it in a general way and some other person should have been making investigations some-

what along the same lines, and should make an application before the Patent Department for a patent, it would lay the foundation for a complicated question of fact to be determined before the Patent Department, which would involve the taking of a lot of evidence and everything of that kind?

Dr. DORSET. Yes, sir; I think that would certainly be true.

Mr. SLOAN. I do not know whether I caught the trend of the chairman's questions, but as I understand that is the purpose of taking a patent, either by the individual or by the Government, to set aside the real discovery; to show by whom it was made, and not to leave any broad question of fact unsettled that could be settled very quickly when the facts are fresh in the mind, and the other fellow has not the opportunity to be operating for a few weeks or a few months in manufacturing facts.

Dr. DORSET. The sole object of taking out patents, so far as I have ever known, was to protect the people of the United States. Just how this was to be accomplished, I had not given particular thought.

Mr. SLOAN. Have you had anything to do with any of these demonstrations as to the manner of treatment through the use of serum, concerning which Dr. Melvin testified on yesterday?

Dr. DORSET. I have not personally taken part in these demonstrations, but they have been under my general direction.

Mr. SLOAN. What is your opinion with regard to demonstrations which might be made through the various States, where the hog industry is large, as to the probability of their value, and some suggestion as to how they ought to be carried out?

Dr. DORSET. In reply to that question I will say that I agree entirely with the statement of the chairman at yesterday's session that although we have known this serum for some time, and although a great many hogs have been treated with it, with varying success, that we are making little progress toward the eradication of the disease, although a great deal of money has been saved by the treatment of hogs in infected herds. My idea of a demonstration experiment is that it is a most desirable thing to carry out.

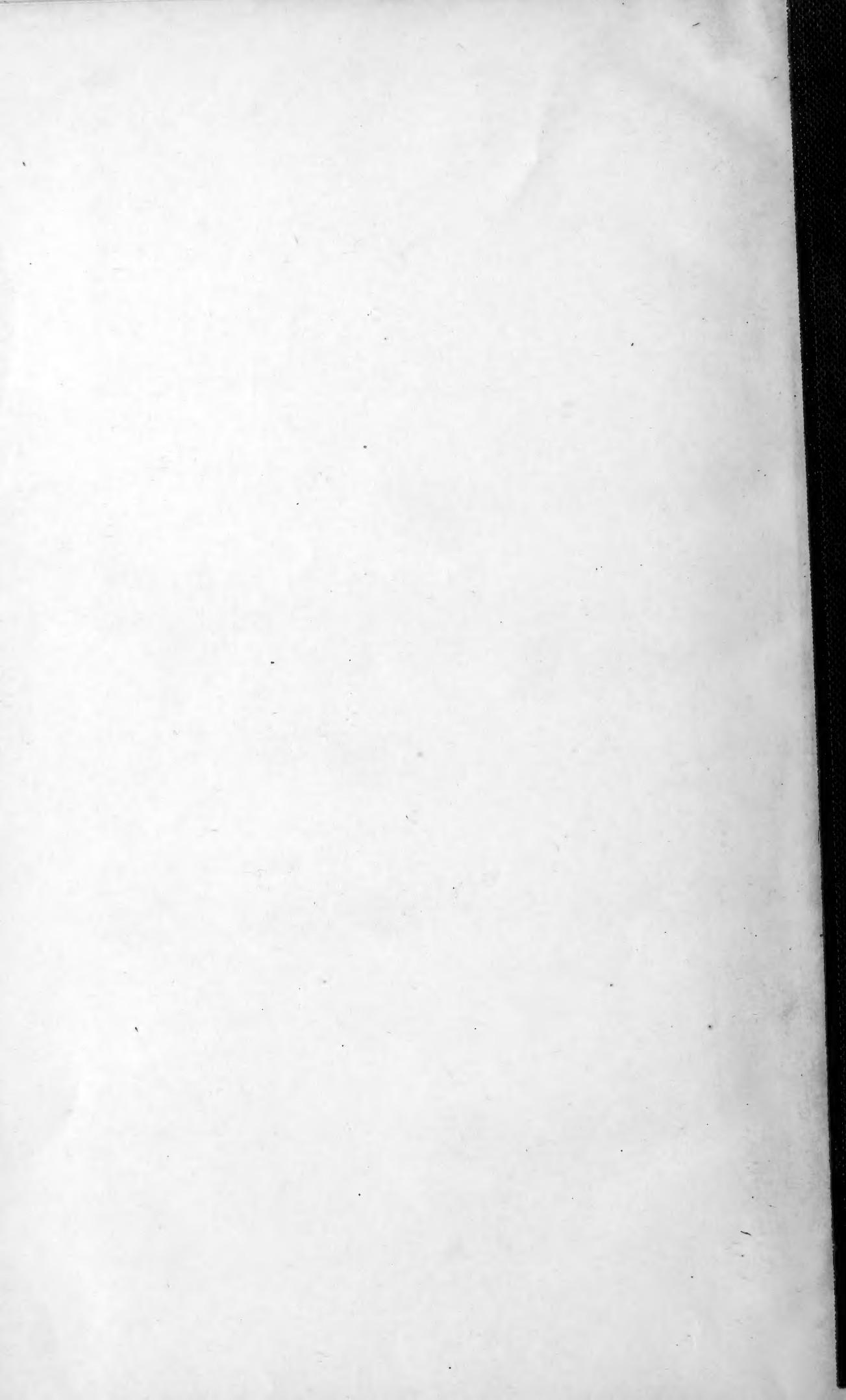
I believe that from one to four counties should be selected as an experimental area; that from the States should be secured authority to quarantine that area; that we should have the assistance of State authorities in work in those counties, so far as possible to get it; that the Bureau of Animal Industry should then place in each of these counties one or more men to control the situation; that these men should through voluntary or State agents, secure information concerning the number of hogs and the disease in their territory; that immediately upon the outbreak of disease he should proceed and treat the infected herd, clean up, disinfect the premises, and probably apply serum to all exposed adjoining herds. I believe that at the beginning of the work probably much could be done by placing in this area where the experiment is to be conducted a lecturer of some sort, some department man, to give talks and explain to the farmers what was advisable to be done—an educational campaign, in other words. It is my opinion that, following a method of that sort, the disease can be completely controlled in the county or in a block of counties. The whole matter of success will depend on the organization and the funds available and the serum, of course, to use as needed. No such demonstration as that has ever been carried out. We have worked almost

exclusively on individual farms or experiments to show that the serum will protect hogs from hog cholera. The latter fact has been absolutely demonstrated not only in this country but abroad, and we now need to go further and control the disease by linking the serum with an efficient organization. That is essentially my opinion of how the work should be carried out.

Mr. SLOAN. In what essential particular is the hog cholera proposition now different from the southern cattle-tick proposition—first, as to whether an efficient remedy is discovered, and, second, as to the manner of handling it?

Dr. DORSET. First of all, I would say that hog cholera exists in all parts of the United States, no one section being free. We have an efficient remedy against the disease. There is little progress being made in eradication, although there seems to be no reason why we should not proceed to eradicate hog cholera in the same way that the Government is now cooperating with States for the eradication of the Texas fever. The hog-cholera work will probably be more difficult, and for that reason may require the expenditure of more funds in the end; but there should at least be a start made, showing the States what can be done, so that they will then provide funds to cooperate with the National Government.

Thereupon the committee adjourned.



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